

What I claim as my invention is:

1 1. A circuit for balancing cell voltages in a multiple-cell battery, comprising:
2 means for comparing voltage at a junction of a first cell and a second cell with a
3 reference voltage and generating a comparison signal in response to a difference
4 between said junction voltage and said reference voltage; and
5 a first current generator connected across said first cell and a second current
6 generator connected across said second cell, said current generators being normally in
7 an off state, wherein only one of said first and second current generators is turned on at a
8 time in response to said comparison signal.

1 2. A circuit in accordance with claim 1 wherein said reference voltage is provided
2 by a voltage divider connected across said first and second cells.

1 3. A circuit in accordance with claim 1 wherein said comparison means comprises
2 a differential amplifier.

1 4. A circuit in accordance with claim 1 wherein said first and second current
2 generators each comprise a transistor and a resistor in series with a collector thereof, said
3 transistor being responsive to said comparison signal applied to a base thereof to function
4 as a switch.

1 5. A circuit in accordance with claim 4 wherein said transistors are opposite
2 polarity so as to allow only one transistor to conduct, depending on the polarity of said
3 comparison signal.

1 6. A circuit for balancing cell voltages in a multiple-cell battery, comprising:
2 a voltage divider coupled across a series-connection of a first cell and a second
3 cell;

4 a differential amplifier having a first input coupled to a midpoint of said voltage
5 divider, and a second input coupled to a junction of said first and second cells, said
6 differential amplifier generating a comparison signal upon detection of an unbalanced
7 condition of said first and second cells; and

8 first and second current generators coupled respectively across said first and
9 second cells, said first and second current generators each having a control element
10 coupled to the output of said differential amplifier,

11 wherein one of said first and second current generators is turned on responsive to
12 said comparison signal.

1 7. A circuit in accordance with claim 6 wherein said first and second current
2 generators include first and second transistors.

1 8. A circuit in accordance with claim 7 wherein said first and second transistors
2 each have a base, a collector, and an emitter, wherein the bases of said first and second
3 transistors are coupled together to an output of said differential amplifier, said collectors
4 are connected to respective current-setting resistors, and said emitters of said first and
5 second transistors are coupled together to said junction of said first and second cells.

1 9. A circuit in accordance with claim claim 7 wherein said first and second
2 transistors are opposite polarity.

1 10. A circuit in accordance with claim 6 wherein said differential amplifier may be
2 enabled only during a battery charge cycle.